

TherapheresisSeq Listing.txt
SEQUENCE LISTING

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<110> Universitaet Stuttgart
      PFIZENMAIER, Klaus
      SCHEURICH, Peter
      GRUNWALD, Ingo
      KRIPPNER-HEIDENREICH, Anja

<120> RECOMBINANT POLYPEPTIDES OF THE MEMBERS OF THE TNF LIGAND FAMILY AND USE
THEREOF

<130> 040045-0358701

<140> 10/594,189
<141> 2006-09-25

<150> PCT/EP2005/003158
<151> 2005-03-24

<150> DE 102004014983.6-4
<151> 2004-03-26

<160> 41

<170> PatentIn version 3.3

<210> 1
<211> 8
<212> PRT
<213> Artificial Sequence Sequence

<220>
<223> Description of Artificial Sequence: Synthetic flag-tag peptide sequence

<400> 1
Asp Tyr Lys Asp Asp Asp Lys
1          5

<210> 2
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide linker sequence

<400> 2
Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser
1          5          10

<210> 3
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide linker sequence

<400> 3

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Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser
1 5 10 15

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<210> 4
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Linker sequence

<400> 4
ggtggcgggt ctggtggcgg ttctggtggc ggatcc 36

<210> 5
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Linker sequence

<400> 5
ggtggcgggt ctggtggcgg ttctggtggc ggttctggtg gcggatcc 48

<210> 6
<211> 84
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: scTNF Primer I

<400> 6
tcgattaagc ttcccggggg atccgccacc agaaccgcca ccagaaccgc caccagagc 60
gatgataccg aagtaaacct gacc 84

<210> 7
<211> 97
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: scTNF Primer II

<400> 7
atcgattaag cttcccgggg gatccgccac cagaaccgcc accagaaccg ccaccagaac 60
cgccaccag agcgaatgata ccgaagtaaa cctgacc 97

<210> 8
<211> 43
<212> DNA
<213> Artificial Sequence

<220>

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<223> Description of Artificial Sequence: scTNF Primer III

<400> 8
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<210> 9
<211> 53
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: scTNF Primer IV

<400> 9
gggggggaag cttatcgata gttagatatt atcacagagc gatgataccg aag 53

<210> 10
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: scTNF Primer V

<400> 10
cctgtacctg atctactccc aggttctgtt caaaggccag g 41

<210> 11
<211> 97
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: cys-scTNF Primer VI

<400> 11
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gatctggtca tcatcatcac catcacggct cagacgg 97

<210> 12
<211> 97
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: cys-scTNF Primer VII

<400> 12
cgctccgtct gagccgtgat ggtgatgatg atgaccagat ccaccggcgc agcgaccttc 60
gatgagctct cccatagtta atttctcctc tttaatg 97

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<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: Primer FasL#1R

<400> 13
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cgccaccgag cttatataag ccgaaaaaacg tctgagattc                            100

<210> 14
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer FasL#2F

<400> 14
ggggtagcgg ccgcgctgtc gacgattaca aagac                                35

<210> 15
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer FasL#3F

<400> 15
agaaaaaaag gagctgagga aagtgg                                          26

<210> 16
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer FasL#4F

<400> 16
ggggcggtac cgaaaaaaag gagctgagga aagtgg                                36

<210> 17
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer FasL#5R

<400> 17
ggggcctcta gaatcgatgg tcagagctta tataagccga aaaacgtctg                50

<210> 18
<211> 51
<212> DNA
<213> Artificial Sequence

<220>

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<223> Description of Artificial Sequence: Primer HA-IF

<400> 18
cgccatggct atcatctacc tcattcctct gttcaccgct gtgcggggag c 51

<210> 19
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer HA-IIR

<400> 19
ggccgctgcc ccgcacagcg gtgaacagga ggatgaggtat gatgatagcc atggcggtac 60

<210> 20
<211> 106
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer TRAIL#1R

<400> 20
atcgatttct agaccgggg gatccgccac cagaaccgcc accagaaccg ccaccagaac 60
cgccaccgcc aactaaaaag gccccgaaaa aactggcttc atggtc 106

<210> 21
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer TRAIL#2F

<400> 21
ggggtagaat tcggaacctc tgaggaaacc atttctacag ttcaag 46

<210> 22
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer TRAIL#3F

<400> 22
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<210> 23
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer TRAIL#4F

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<400> 23
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<210> 24
<211> 53
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer TRAIL#5R

<400> 24
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<210> 25
<211> 1506
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: sCTNF-L short chain

<220>
<221> CDS
<222> (1)..(1503)

<400> 25
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Met Arg Gly Ser His His His His His Gly Ser Ala Ser Ser
1 5 10 15

tct cgt acc ccg tct gac aaa ccg gtt gct cac gtt gtt gca aac ccg 96
Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val Val Ala Asn Pro
20 25 30

cag gct gaa ggt caa ctg caa tgg ctg aac cgt cgt gct aac gct ctg 144
Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn Ala Leu
35 40 45

ctg gct aac ggt gtt gaa ctg cgt gac aac cag ctg gtt gtt ccg tct 192
Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu Val Val Pro Ser
50 55 60

gaa ggc ctg tac ctg atc tac tcc cag gtt ctg ttc aaa ggc cag ggc 240
Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly Gln Gly
65 70 75 80

tgc ccg tcc acc cac gtt ctg ctg acc cac acc atc tct cgt atc gct 288
Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile Ser Arg Ile Ala
85 90 95

gtt tcc tac cag acc aaa gta aac ctg ctg tct gca atc aaa tct ccg 336
Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser Pro
100 105 110

tgc cag cgt gaa acc ccg gaa ggt gct gaa gct aaa ccg tgg tac gaa 384
Cys Gln Arg Glu Thr Pro Glu Gly Ala Lys Pro Trp Tyr Glu
115 120 125

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TherapheresisSeq Listing.txt																
ccg Pro	atc Ile 130	tac Tyr	ctg Leu	ggt Gly	ggc Gly	gtt Val 135	ttt Phe	caa Gln	ctg Leu	gag Glu	aaa Lys 140	ggt Gly	gac Asp	cgt Arg	ctg Leu	432
tct Ser 145	gca Ala	gaa Glu	att Ile	aac Asn	cgt Arg 150	ccg Pro	gac Asp	tac Tyr	ctg Leu	gac Asp 155	ttc Phe	gca Ala	gaa Glu	tct Ser	ggt Gly 160	480
cag Gln	ggt Val	tac Tyr	ttc Phe	ggt Gly 165	atc Ile	atc Ile	gct Ala	ctg Leu	ggt Gly 170	ggc Gly	ggt Gly	tct Ser	ggt Gly	ggc Gly 175	ggt Gly	528
tct Ser	ggt Gly	ggc Gly	gga Gly 180	tcc Ser	tct Ser	tct Ser	cgt Arg	acc Thr 185	ccg Pro	tct Ser	gac Asp	aaa Lys	ccg Pro 190	ggt Val	gct Ala	576
cac His	gtt Val	gtt Val 195	gca Ala	aac Asn	ccg Pro	cag Gln	gct Ala 200	gaa Glu	ggt Gly	caa Gln	ctg Leu	caa Gln 205	tgg Trp	ctg Leu	aac Asn	624
cgt Arg	cgt Arg 210	gct Ala	aac Asn	gct Ala	ctg Leu	ctg Leu 215	gct Ala	aac Asn	ggt Gly	gtt Val	gaa Glu 220	ctg Leu	cgt Arg	gac Asp	aac Asn	672
cag Gln 225	ctg Leu	gtt Val	gtt Val	ccg Pro	tct Ser 230	gaa Glu	ggc Gly	ctg Leu	tac Tyr	ctg Leu 235	atc Ile	tac Tyr	tcc Ser	cag Gln	gtt Val 240	720
ctg Leu	ttc Phe	aaa Lys	ggc Gly	cag Gln 245	ggc Gly	tgc Cys	ccg Pro	tcc Ser	acc Thr 250	cac His	gtt Val	ctg Leu	ctg Leu	acc Thr 255	cac His	768
acc Thr	atc Ile	tct Ser	cgt Arg 260	atc Ile	gct Ala	gtt Val	tcc Ser	tac Tyr 265	cag Gln	acc Thr	aaa Lys	gta Val	aac Asn 270	ctg Leu	ctg Leu	816
tct Ser	gca Ala	atc Ile 275	aaa Lys	tct Ser	ccg Pro	tgc Cys	cag Gln 280	cgt Arg	gaa Glu	acc Thr	ccg Pro	gaa Glu 285	ggt Gly	gct Ala	gaa Glu	864
gct Ala	aaa Lys 290	ccg Pro	tgg Trp	tac Tyr	gaa Glu	ccg Pro 295	atc Ile	tac Tyr	ctg Leu	ggt Gly	ggc Gly 300	gtt Val	ttt Phe	caa Gln	ctg Leu	912
gag Glu 305	aaa Lys	ggt Gly	cgt Arg	ctg Leu 310	tct Ser	gca Ala	gaa Glu	att Ile	aac Asn 315	cgt Arg	ccg Pro	gac Asp	tac Tyr	ctg Leu 320		960
gac Asp	ttc Phe	gaa Ala	tct Ser 325	ggt Gly	cag Gln	gtt Val	tac Tyr	ttc Phe 330	ggt Gly	atc Ile	atc Ile	gct Ala	ctg Leu 335	ggt Gly		1008
ggc Gly	ggt Gly	tct Ser	ggt Gly 340	ggc Gly	ggt Gly	tct Ser	ggt Gly	ggc Gly 345	gga Gly	tcc Ser	tct Ser	tct Ser	cgt Arg 350	acc Thr	ccg Pro	1056
tct Ser	gac Asp	aaa Lys 355	ccg Pro	gtt Val	gct Ala	cac His	gtt Val 360	gtt Val	gca Ala	aac Asn	ccg Pro	cag Gln 365	gct Ala	gaa Glu	ggt Gly	1104
caa Gln	ctg Leu 370	caa Gln	tgg Trp	ctg Leu	aac Asn	cgt Arg 375	cgt Arg	gct Ala	aac Asn	gct Ala	ctg Leu 380	ctg Leu	gct Ala	aac Asn	ggt Gly	1152

TherapheresisSeq Listing.txt

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gtt gaa ctg cgt gac aac cag ctg gtt gtt ccg tct gaa ggc ctg tac      1200
Val Glu Leu Arg Asp Asn Gln Leu Val Val Pro Ser Glu Gly Leu Tyr
385                               390                               400

ctg atc tac tcc cag gtt ctg ttc aaa ggc cag ggc tgc ccg tcc acc      1248
Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly Gln Gly Cys Pro Ser Thr
405                               410                               415

cac gtt ctg ctg acc cac acc atc tct cgt atc gct gtt tcc tac cag      1296
His Val Leu Leu Thr His Thr Ile Ser Arg Ile Ala Val Ser Tyr Gln
420                               425                               430

acc aaa gta aac ctg ctg tct gca atc aaa tct ccg tgc cag cgt gaa      1344
Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser Pro Cys Gln Arg Glu
435                               440                               445

acc ccg gaa ggt gct gaa gct aaa ccg tgg tac gaa ccg atc tac ctg      1392
Thr Pro Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu Pro Ile Tyr Leu
450                               455                               460

ggt ggc gtt ttt caa ctg gag aaa ggt gac cgt ctg tct gca gaa att      1440
Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Glu Ser Ala Glu Ile
465                               470                               475                               480

aac cgt ccg gac tac ctg gac ttc gca gaa tct ggt cag gtt tac ttc      1488
Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu Ser Gly Gln Val Tyr Phe
485                               490                               495

ggt atc atc gct ctg tga
Gly Ile Ile Ala Leu
500                               1506

<210> 26
<211> 501
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: sctNF-L short chain peptide

<400> 26
Met Arg Gly Ser His His His His His His Gly Ser Ala Ser Ser Ser
1      5      10      15

Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val Val Ala Asn Pro
20      25      30

Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn Ala Leu
35      40      45

Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu Val Val Pro Ser
50      55      60

Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly Gln Gly
65      70      75      80

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TherapheresisSeq Listing.txt

Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile Ser Arg Ile Ala
 85 90 95
 Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser Pro
 100 105 110
 Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu
 115 120 125
 Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Leu
 130 135 140
 Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu Ser Gly
 145 150 155 160
 Gln Val Tyr Phe Gly Ile Ile Ala Leu Gly Gly Gly Ser Gly Gly Gly
 165 170 175
 Ser Gly Gly Gly Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala
 180 185 190
 His Val Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn
 195 200 205
 Arg Arg Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn
 210 215 220
 Gln Leu Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val
 225 230 235 240
 Leu Phe Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His
 245 250 255
 Thr Ile Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys Val Asn Leu Leu
 260 265 270
 Ser Ala Ile Lys Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu
 275 280 285
 Ala Lys Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu
 290 295 300
 Glu Lys Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu
 305 310 315 320
 Asp Phe Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu Gly
 325 330 335

TherapheresisSeq Listing.txt

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Ser Ser Arg Thr Pro
340 345 350

Ser Asp Lys Pro Val Ala His Val Val Ala Asn Pro Gln Ala Glu Gly
355 360 365

Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn Ala Leu Leu Ala Asn Gly
370 375 380

Val Glu Leu Arg Asp Asn Gln Leu Val Val Pro Ser Glu Gly Leu Tyr
385 390 395 400

Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly Gln Gly Cys Pro Ser Thr
405 410 415

His Val Leu Leu Thr His Thr Ile Ser Arg Ile Ala Val Ser Tyr Gln
420 425 430

Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser Pro Cys Gln Arg Glu
435 440 445

Thr Pro Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu Pro Ile Tyr Leu
450 455 460

Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Leu Ser Ala Glu Ile
465 470 475 480

Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu Ser Gly Gln Val Tyr Phe
485 490 495

Gly Ile Ile Ala Leu
500

<210> 27
<211> 1542
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: cys-scTNF-L short chain

<220>
<221> CDS
<222> (1)..(1539)

<400> 27
atg gga gag ctc atc gaa ggt cgc tgc gcc ggt gga tct ggt cat cat
Met Gly Glu Leu Ile Glu Gly Arg Cys Ala Gly Gly Ser Gly His His
1 5 10 15

48

TherapheresisSeq Listing.txt

cat His	cac His	cat His	cac His 20	ggc Gly	tca Ser	gac Asp	gga Gly	gcg Ala 25	tcg Ser	tct Ser	tct Ser	tct Ser	cgt Arg 30	acc Thr	ccg Pro	96
tct Ser	gac Asp	aaa Lys 35	ccg Pro	ggt Val	gct Ala	cac His	ggt Val 40	ggt Val	gca Ala	aac Asn	ccg Pro	cag Gln 45	gct Ala	gaa Glu	ggt Gly	144
caa Gln 50	ctg Leu	caa Gln	tgg Trp	ctg Leu	aac Asn	cgt Arg 55	cgt Arg	gct Ala	aac Asn	gct Ala	ctg Leu 60	ctg Leu	gct Ala	aac Asn	ggt Gly	192
ggt Val 65	gaa Glu	ctg Leu	cgt Arg	gac Asp	aac Asn 70	cag Gln	ctg Leu	ggt Val	ggt Val	ccg Pro 75	tct Ser	gaa Glu	ggc Gly	ctg Leu	tac Tyr 80	240
ctg Leu	atc Ile	tac Tyr	tcc Ser	cag Gln 85	ggt Val	ctg Leu	ttc Phe	aaa Lys	ggc Gly 90	cag Gln	ggc Gly	tgc Cys	ccg Pro	tcc Ser 95	acc Thr	288
cac His	ggt Val	ctg Leu	ctg Leu 100	acc Thr	cac His	acc Thr	atc Ile	tct Ser 105	cgt Arg	atc Ile	gct Ala	ggt Val	tcc Ser 110	tac Tyr	cag Gln	336
acc Thr	aaa Lys	gta Val 115	aac Asn	ctg Leu	ctg Leu	tct Ser	gca Ala 120	atc Ile	aaa Lys	tct Ser	ccg Pro	tgc Cys 125	cag Gln	cgt Arg	gaa Glu	384
acc Thr 130	ccg Pro	gaa Glu	ggt Gly	gct Ala	gaa Glu	gct Ala 135	aaa Lys	ccg Pro	tgg Trp	tac Tyr	gaa Glu 140	ccg Pro	atc Ile	tac Tyr	ctg Leu	432
ggt Gly 145	ggc Gly	ggt Val	ttt Phe	caa Gln	ctg Leu 150	gag Glu	aaa Lys	ggt Gly	gac Asp	cgt Arg 155	ctg Leu	tct Ser	gca Ala	gaa Glu	att Ile 160	480
aac Asn	cgt Arg	ccg Pro	gac Asp	tac Tyr 165	ctg Leu	gac Asp	ttc Phe	gca Ala	gaa Glu 170	tct Ser	ggt Gly	cag Gln	ggt Val	tac Tyr 175	ttc Phe	528
ggt Gly	atc Ile	atc Ile	gct Ala 180	ctg Leu	ggt Gly	ggc Gly	ggt Gly	tct Ser 185	ggt Gly	ggc Gly	ggt Gly	tct Ser	ggt Gly 190	ggc Gly	gga Gly	576
tcc Ser	tct Ser	tct Ser 195	cgt Arg	acc Thr	ccg Pro	tct Ser	gac Asp 200	aaa Lys	ccg Pro	ggt Val	gct Ala 205	cac His	ggt Val	ggt Val	gca Ala	624
aac Asn 210	ccg Pro	cag Gln	gct Ala	gaa Glu	ggt Gly	caa Gln 215	ctg Leu	caa Gln	tgg Trp	ctg Leu	aac Asn 220	cgt Arg	cgt Arg	gct Ala	aac Asn	672
gct Ala 225	ctg Leu	ctg Leu	gct Ala	aac Asn 230	ggt Val	ggt Val	gaa Glu	ctg Leu	cgt Arg	gac Asp 235	aac Asn	cag Gln	ctg Leu	ggt Val	ggt Val 240	720
ccg Pro	tct Ser	gaa Glu	ggc Gly	ctg Leu 245	tac Tyr	ctg Leu	atc Ile	tac Tyr	tcc Ser 250	cag Gln	ggt Val	ctg Leu	ttc Phe	aaa Lys 255	ggc Gly	768
cag Gln	ggc Gly	tgc Cys	ccg Pro	tcc Ser	acc Thr	cac His	ggt Val	ctg Leu	ctg Leu	acc Thr	cac His	acc Thr	atc Ile	tct Ser	cgt Arg	816

g.txt
270

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Leu

<210> 28
 <211> 513
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: cys-sCTNF-L short peptide

<400> 28

Met Gly Glu Leu Ile Glu Gly Arg Cys Ala Gly Gly Ser Gly His His
 1 5 10 15

His His His His Gly Ser Asp Gly Ala Ser Ser Ser Arg Thr Pro
 20 25 30

Ser Asp Lys Pro Val Ala His Val Val Ala Asn Pro Gln Ala Glu Gly
 35 40 45

Gln Leu Gln Trp Leu Asn Arg Ala Asn Ala Leu Leu Ala Asn Gly
 50 55 60

Val Glu Leu Arg Asp Asn Gln Leu Val Val Pro Ser Glu Gly Leu Tyr
 65 70 75 80

Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly Gln Gly Cys Pro Ser Thr
 85 90 95

His Val Leu Leu Thr His Thr Ile Ser Arg Ile Ala Val Ser Tyr Gln
 100 105 110

Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser Pro Cys Gln Arg Glu
 115 120 125

Thr Pro Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu Pro Ile Tyr Leu
 130 135 140

Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Leu Ser Ala Glu Ile
 145 150 155 160

Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu Ser Gly Gln Val Tyr Phe
 165 170 175

Gly Ile Ile Ala Leu Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
 180 185 190

Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val Val Ala
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200 205

195

Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn
210 215

Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu Val Val
225 230 235 240

Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly
245 250 255

Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile Ser Arg
260 265 270

Ile Ala Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala Ile Lys
275 280 285

Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys Pro Trp
290 295 300

Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Lys Gly Asp
305 310 315 320

Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu
325 330 335

Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu Gly Gly Gly Ser Gly
340 345 350

Gly Gly Ser Gly Gly Gly Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro
355 360 365

Val Ala His Val Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp
370 375 380

Leu Asn Arg Arg Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg
385 390 395 400

Asp Asn Gln Leu Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser
405 410 415

Gln Val Leu Phe Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu
420 425 430

Thr His Thr Ile Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys Val Asn
435 440 445

TherapheresisSeq Listing.txt

Leu Leu Ser Ala Ile Lys Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly
450 455 460

Ala Glu Ala Lys Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe
465 470 475 480

Gln Leu Glu Lys Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp
485 490 495

Tyr Leu Asp Phe Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala
500 505 510

Leu

<210> 29
<211> 1476
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: scFasL sequence

<220>
<221> CDS
<222> (1)..(1473)

<400> 29
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gcc gcg gat tac aaa gac gat gac gat aaa gaa ttc acg cgt gaa aaa 96
Ala Ala Asp Tyr 20 Lys Asp Asp Asp Asp Lys Glu Phe Thr Arg Glu Lys
gag gat ctg agg aaa gtg gcc cat tta aca ggc aag tcc aac tca agg 144
Lys Glu Leu Arg Lys Val Ala His 40 Leu Thr Gly Lys Ser Asn Ser Arg
35
tcc atg cct ctg gaa tgg gaa gac acc tat gga att gtc ctg ctt tct 192
Ser Met 50 Pro Leu Glu Trp 55 Glu Asp Thr Tyr Gly Ile Val Leu Leu Ser
gga gtg aag tat aag aag ggt ggc ctt gtg atc aat gaa act ggg ctg 240
Gly Val Lys Tyr Lys Lys Gly Gly Leu Val 70 75 Ile Asn Glu Thr Gly Leu
65 80
tac ttt gta tat tcc aaa gta tac ttc cgg ggt caa tct tgc aac aac 288
Tyr Phe Val Tyr 85 Ser Lys Val Tyr Phe Arg Gly Gln Ser Cys Asn
90 95
ctg ccc ctg agc cac aag gtc tac atg agg aac tct aag tat ccc cag 336
Leu Pro Leu Ser 100 His Lys Val Tyr Met Arg Asn Ser Lys Tyr Pro Gln
110
gat ctg gtg atg atg gag ggg aag atg atg agc tac tgc act act ggg 384
15

TherapheresisSeq Listing.txt																
Asp	Leu	Val	Met	Met	Glu	Gly	Lys	Met	Met	Ser	Tyr	Cys	Thr	Thr	Gly	
		115					120					125				
cag	atg	tgg	gcc	cgc	agc	agc	tac	ctg	ggg	gca	gtg	ttc	aat	ctt	acc	432
Gln	Met	Trp	Ala	Arg	Ser	Ser	Tyr	Leu	Gly	Ala	Val	Phe	Asn	Leu	Thr	
	130					135					140					
agt	gct	gat	cat	tta	tat	gtc	aac	gta	tct	gag	ctc	tct	ctg	gtc	aat	480
Ser	Ala	Asp	His	Leu	Tyr	Val	Asn	Val	Ser	Glu	Leu	Ser	Leu	Val	Asn	
	145				150					155					160	
ttt	gag	gaa	tct	cag	acg	ttt	ttc	ggc	tta	tat	aag	ctc	ggt	ggc	ggt	528
Phe	Glu	Glu	Ser	Gln	Thr	Phe	Phe	Gly	Leu	Tyr	Lys	Leu	Gly	Gly	Gly	
				165					170					175		
tct	ggt	ggc	ggt	tct	ggt	ggc	ggt	tct	ggt	ggc	gga	tca	gaa	aaa	aag	576
Ser	Gly	Gly	Ser	Ser	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Ser	Glu	Lys	Lys	
			180					185					190			
gag	ctg	agg	aaa	gtg	gcc	cat	tta	aca	ggc	aag	tcc	aac	tca	agg	tcc	624
Glu	Leu	Arg	Lys	Val	Ala	His	Leu	Thr	Gly	Lys	Ser	Asn	Ser	Arg	Ser	
		195					200					205				
atg	cct	ctg	gaa	tgg	gaa	gac	acc	tat	gga	att	gtc	ctg	ctt	tct	gga	672
Met	Pro	Leu	Glu	Trp	Glu	Asp	Thr	Tyr	Gly	Ile	Val	Leu	Leu	Ser	Gly	
	210					215					220					
gtg	aag	tat	aag	aag	ggt	ggc	ctt	gtg	atc	aat	gaa	act	ggg	ctg	tac	720
Val	Lys	Tyr	Lys	Lys	Gly	Gly	Leu	Val	Ile	Asn	Glu	Thr	Gly	Leu	Tyr	
	225				230					235					240	
ttt	gta	tat	tcc	aaa	gta	tac	ttc	cgg	ggt	caa	tct	tgc	aac	aac	ctg	768
Phe	Val	Tyr	Ser	Lys	Val	Tyr	Phe	Arg	Gly	Gln	Ser	Cys	Asn	Asn	Leu	
				245					250					255		
ccc	ctg	agc	cac	aag	gtc	tac	atg	agg	aac	tct	aag	tat	ccc	gat		816
Pro	Leu	Ser	His	Lys	Val	Tyr	Met	Arg	Asn	Ser	Lys	Tyr	Pro	Gln	Asp	
			260					265					270			
ctg	gtg	atg	atg	gag	ggg	aag	atg	atg	agc	tac	tgc	act	act	ggg	cag	864
Leu	Val	Met	Met	Glu	Gly	Lys	Met	Met	Ser	Tyr	Cys	Thr	Thr	Gly	Gln	
		275					280					285				
atg	tgg	gcc	cgc	agc	agc	tac	ctg	ggg	gca	gtg	ttc	aat	ctt	acc	agt	912
Met	Trp	Ala	Arg	Ser	Ser	Tyr	Leu	Gly	Ala	Val	Phe	Asn	Leu	Thr	Ser	
	290					295					300					
gct	gat	cat	tta	tat	gtc	aac	gta	tct	gag	ctc	tct	ctg	gtc	aat	ttt	960
Ala	Asp	His	Leu	Tyr	Val	Asn	Val	Ser	Glu	Leu	Ser	Leu	Val	Asn	Phe	
	305				310					315					320	
gag	gaa	tct	cag	acg	ttt	ttc	ggc	tta	tat	aag	ctc	ggt	ggc	ggt	tct	1008
Glu	Glu	Ser	Gln	Thr	Phe	Phe	Gly	Leu	Tyr	Lys	Leu	Gly	Gly	Gly	Ser	
			325						330				335			
ggt	ggc	ggt	tct	ggt	ggc	ggt	tct	ggt	ggc	gga	tcc	gaa	aaa	aag	gag	1056
Gly	Gly	Gly	Ser	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Ser	Glu	Lys	Lys	Glu	
			340				345					350				
ctg	agg	aaa	gtg	gcc	cat	tta	aca	ggc	aag	tcc	aac	tca	agg	tcc	atg	1104
Leu	Arg	Lys	Val	Ala	His	Leu	Thr	Gly	Lys	Ser	Asn	Ser	Arg	Ser	Met	
		355					360					365				

TherapheresisSeq Listing.txt

cct Pro	ctg Leu	gaa Glu	tgg Trp	gaa Glu	gac Asp	acc Thr	tat Tyr	gga Gly	att Ile	gtc Val	ctg Leu	ctt Ser	tct Gly	gga Val	gtg Val	1152
370						375					380					
aag Lys	tat Tyr	aag Lys	aag Lys	ggt Gly	ggc Gly	ctt Leu	gtg Val	atc Ile	aat Asn	gaa Glu	act Thr	ggg Gly	ctg Leu	tac Tyr	ttt Phe	1200
385					390					395					400	
gta Val	tat Tyr	tcc Ser	aaa Lys	gta Val	tac Tyr	ttc Phe	cgg Arg	ggt Gly	caa Gln	tct Ser	tgc Cys	aac Asn	aac Asn	ctg Leu	ccc Pro	1248
				405					410					415		
ctg Leu	agc Ser	cac His	aag Lys	gtc Val	tac Tyr	atg Met	agg Arg	aac Asn	tct Ser	aag Lys	tat Tyr	ccc Pro	cag Gln	gat Asp	ctg Leu	1296
			420					425					430			
gtg Val	atg Met	atg Met	gag Glu	ggg Gly	aag Lys	atg Met	atg Met	agc Ser	tac Tyr	tgc Cys	act Thr	act Thr	ggg Gly	cag Gln	atg Met	1344
	435					440					445					
tgg Trp	gcc Ala	cgc Arg	agc Ser	agc Ser	tac Tyr	ctg Leu	ggg Gly	gca Ala	gtg Val	ttc Phe	aat Asn	ctt Leu	acc Thr	agt Ser	gct Ala	1392
	450					455					460					
gat Asp	cat His	tta Leu	tat Tyr	gtc Val	aac Asn	gta Val	tct Ser	gag Glu	ctc Leu	tct Ser	ctg Leu	gtc Val	aat Asn	ttt Phe	gag Glu	1440
465					470					475					480	
gaa Glu	tct Ser	cag Gln	acg Thr	ttt Phe	ttc Phe	ggc Gly	tta Leu	tat Tyr	aag Lys	ctc Leu	tga					1476
				485					490							

<210> 30
 <211> 491
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: scFasL peptide sequence

<400> 30

Met Ala Ile Ile Tyr Leu Ile Leu Leu Phe Thr Ala Val Arg Gly Ala
 1 5 10 15

Ala Ala Asp Tyr Lys Asp Asp Asp Asp Lys Glu Phe Thr Arg Glu Lys
 20 25 30

Lys Glu Leu Arg Lys Val Ala His Leu Thr Gly Lys Ser Asn Ser Arg
 35 40 45

Ser Met Pro Leu Glu Trp Glu Asp Thr Tyr Gly Ile Val Leu Leu Ser
 50 55 60

Gly Val Lys Tyr Lys Lys Gly Gly Leu Val Ile Asn Glu Thr Gly Leu
 65 70 75 80

TherapheresisSeq Listing.txt

Tyr Phe Val Tyr Ser Lys Val Tyr Phe Arg Gly Gln Ser Cys Asn Asn
85 90 95

Leu Pro Leu Ser His Lys Val Tyr Met Arg Asn Ser Lys Tyr Pro Gln
100 105 110

Asp Leu Val Met Met Glu Gly Lys Met Met Ser Tyr Cys Thr Thr Gly
115 120 125

Gln Met Trp Ala Arg Ser Ser Tyr Leu Gly Ala Val Phe Asn Leu Thr
130 135 140

Ser Ala Asp His Leu Tyr Val Asn Val Ser Glu Leu Ser Leu Val Asn
145 150 155 160

Phe Glu Glu Ser Gln Thr Phe Phe Gly Leu Tyr Lys Leu Gly Gly Gly
165 170 175

Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Glu Lys Lys
180 185 190

Glu Leu Arg Lys Val Ala His Leu Thr Gly Lys Ser Asn Ser Arg Ser
195 200 205

Met Pro Leu Glu Trp Glu Asp Thr Tyr Gly Ile Val Leu Leu Ser Gly
210 215 220

Val Lys Tyr Lys Lys Gly Gly Leu Val Ile Asn Glu Thr Gly Leu Tyr
225 230 235 240

Phe Val Tyr Ser Lys Val Tyr Phe Arg Gly Gln Ser Cys Asn Asn Leu
245 250 255

Pro Leu Ser His Lys Val Tyr Met Arg Asn Ser Lys Tyr Pro Gln Asp
260 265 270

Leu Val Met Met Glu Gly Lys Met Met Ser Tyr Cys Thr Thr Gly Gln
275 280 285

Met Trp Ala Arg Ser Ser Tyr Leu Gly Ala Val Phe Asn Leu Thr Ser
290 295 300

Ala Asp His Leu Tyr Val Asn Val Ser Glu Leu Ser Leu Val Asn Phe
305 310 315 320

Glu Glu Ser Gln Thr Phe Phe Gly Leu Tyr Lys Leu Gly Gly Gly Ser
325 330 335

TherapheresisSeq Listing.txt

Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Glu Lys Lys Glu
340 345 350

Leu Arg Lys Val Ala His Leu Thr Gly Lys Ser Asn Ser Arg Ser Met
355 360 365

Pro Leu Glu Trp Glu Asp Thr Tyr Gly Ile Val Leu Leu Ser Gly Val
370 375 380

Lys Tyr Lys Lys Gly Gly Leu Val Ile Asn Glu Thr Gly Leu Tyr Phe
385 390 395 400

Val Tyr Ser Lys Val Tyr Phe Arg Gly Gln Ser Cys Asn Asn Leu Pro
405 410 415

Leu Ser His Lys Val Tyr Met Arg Asn Ser Lys Tyr Pro Gln Asp Leu
420 425 430

Val Met Met Glu Gly Lys Met Met Ser Tyr Cys Thr Thr Gly Gln Met
435 440 445

Trp Ala Arg Ser Ser Tyr Leu Gly Ala Val Phe Asn Leu Thr Ser Ala
450 455 460

Asp His Leu Tyr Val Asn Val Ser Glu Leu Ser Leu Val Asn Phe Glu
465 470 475 480

Glu Ser Gln Thr Phe Phe Gly Leu Tyr Lys Leu
485 490

<210> 31
<211> 1869
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: scTRAIL sequence

<220>
<221> CDS
<222> (1)..(1866)

<400> 31
atg gct atc atc tac ctc atc ctc ctg ttc acc gct gtg cgg ggc gcg 48
Met Ala Ile Ile Tyr Leu Ile Leu Leu Phe Thr Ala Val Arg Gly Ala
1 5 10 15

gcc gcg gat tac aaa gac gat gac gat aaa gaa ttc gga acc tct gag 96
Ala Ala Asp Tyr Lys Asp Asp Asp Asp Lys Glu Phe Gly Thr Ser Glu
20 25 30

gaa acc att tct aca gtt caa gaa aag caa caa aat att tct ccc cta 144
Page 19

TherapheresisSeq Listing.txt															
Glu	Thr	Ile	Ser	Thr	Val	Gln	Glu	Lys	Gln	Gln	Asn	Ile	Ser	Pro	Leu
		35					40				45				
gtg	aga	gaa	aga	ggt	cct	cag	aga	gta	gca	gct	cac	ata	act	ggg	acc
Val	Arg	Glu	Arg	Gly	Pro	Gln	Arg	Val	Ala	Ala	His	Ile	Thr	Gly	Thr
	50					55					60				
aga	gga	aga	agc	aac	aca	ttg	tct	tct	cca	aac	tcc	aag	aat	gaa	aag
Arg	Gly	Arg	Ser	Asn	Thr	Leu	Ser	Ser	Pro	Asn	Ser	Lys	Asn	Glu	Lys
65					70				75					80	
gct	ctg	ggc	cgc	aaa	ata	aac	tcc	tgg	gaa	tca	tca	agg	agt	ggg	cat
Ala	Leu	Gly	Arg	Lys	Ile	Asn	Ser	Trp	Glu	Ser	Ser	Arg	Ser	Gly	His
				85					90					95	
tca	ttc	ctg	agc	aac	ttg	cac	ttg	agg	aat	ggt	gaa	ctg	gtc	atc	cat
Ser	Phe	Leu	Asn	Asn	Leu	His	Leu	Arg	Asn	Gly	Glu	Leu	Val	Ile	His
			100				105						110		
gaa	aaa	ggg	ttt	tac	tac	atc	tat	tcc	caa	aca	tac	ttt	cga	ttt	cag
Glu	Lys	Gly	Phe	Tyr	Tyr	Ile	Tyr	Ser	Gln	Thr	Tyr	Phe	Arg	Phe	Gln
		115					120					125			
gag	gaa	ata	aaa	gaa	aac	aca	aag	aac	gac	aaa	caa	atg	gtc	caa	tat
Glu	Glu	Ile	Lys	Glu	Asn	Thr	Lys	Asn	Asp	Lys	Gln	Met	Val	Gln	Tyr
		130				135					140				
att	tac	aaa	tac	aca	agt	tat	cct	gac	cct	ata	ttg	ttg	atg	aaa	agt
Ile	Tyr	Lys	Tyr	Thr	Ser	Tyr	Pro	Asp	Pro	Ile	Leu	Leu	Met	Lys	Ser
145					150					155					160
gct	aga	aat	agt	tgt	tgg	tct	aaa	gat	gca	gaa	tat	gga	ctc	tat	tcc
Ala	Arg	Asn	Ser	Cys	Trp	Ser	Lys	Asp	Ala	Glu	Tyr	Gly	Leu	Tyr	Ser
				165					170					175	
atc	tat	caa	ggg	gga	ata	ttt	gag	ctt	aag	gaa	aat	gac	aga	att	ttt
Ile	Tyr	Gln	Gly	Gly	Ile	Phe	Glu	Leu	Lys	Glu	Asn	Asp	Arg	Ile	Phe
			180				185						190		
gtt	tct	gta	aca	aat	gag	cac	ttg	ata	gac	atg	gac	cat	gaa	gcc	agt
Val	Ser	Val	Thr	Asn	Glu	His	Leu	Ile	Asp	Met	Asp	His	Glu	Ala	Ser
		195					200					205			
ttt	ttc	ggg	gcc	ttt	tta	gtt	ggc	ggt	ggc	ggt	tct	ggg	ggc	ggt	tct
Phe	Phe	Gly	Ala	Phe	Leu	Val	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Ser
		210				215					220				
ggt	ggc	ggt	tct	ggt	ggc	gga	tca	acc	tct	gag	gaa	acc	att	tct	aca
Gly	Gly	Gly	Ser	Gly	Gly	Gly	Ser	Thr	Ser	Glu	Glu	Thr	Ile	Ser	Thr
		225			230				235					240	
gtt	caa	gaa	aag	caa	aat	att	tct	ccc	cta	gtg	aga	gaa	aga	ggt	
Val	Gln	Glu	Lys	Gln	Gln	Asn	Ile	Ser	Pro	Leu	Val	Arg	Glu	Arg	Gly
			245						250				255		
cct	cag	aga	gta	gca	gct	cac	ata	act	ggg	acc	aga	gga	aga	agc	aac
Pro	Gln	Arg	Val	Ala	Ala	His	Ile	Thr	Gly	Thr	Arg	Gly	Arg	Ser	Asn
			260				265						270		
aca	ttg	tct	tct	cca	aac	tcc	aag	aat	gaa	aag	gct	ctg	ggc	cgc	aaa
Thr	Leu	Ser	Ser	Pro	Asn	Ser	Lys	Asn	Glu	Lys	Ala	Leu	Gly	Arg	Lys
		275					280						285		

TherapheresisSeq Listing.txt																	
ata Ile	aac Asn 290	tcc Ser	tggt Trp	gaa Glu	tca Ser	tca Ser 295	agg Arg	agt Ser	ggg Gly	cat His	tca Ser 300	tcc Phe	ctg Leu	agc Ser	aac Asn		912
ttg Leu 305	cac His	ttg Leu	agg Arg	aat Asn	ggt Gly 310	gaa Glu	ctg Leu	gtc Val	atc Ile	cat His 315	gaa Glu	aaa Lys	ggg Gly	ttt Phe	tac Tyr 320		960
tac Tyr	atc Ile	tat Tyr	tcc Ser	caa Gln 325	aca Thr	tac Tyr	ttt Phe	cga Arg	ttt Phe 330	cag Gln	gag Glu	gaa Glu	ata Ile	aaa Lys 335	gaa Glu		1008
aac Asn	aca Thr	aag Lys	aac Asn 340	gac Asp	aaa Lys	caa Gln	atg Met	gtc Val 345	caa Gln	tat Tyr	att Ile	tac Tyr	aaa Lys 350	tac Tyr	aca Thr		1056
agt Ser	tat Tyr	cct Pro 355	gac Asp	cct Pro	ata Ile	ttg Leu 360	ttg Leu	atg Met	aaa Lys	agt Ser	gct Ala	aga Arg 365	aat Asn	agt Ser	tgt Cys		1104
tggt Trp 370	tct Ser	aaa Lys	gat Asp	gca Ala	gaa Glu	tat Tyr 375	gga Gly	ctc Leu	tat Tyr	tcc Ser	atc Ile 380	tat Tyr	caa Gln	ggg Gly	gga Gly		1152
ata Ile 385	ttt Phe	gag Glu	ctt Leu	aag Lys	gaa Glu 390	aat Asn	gac Asp	aga Arg	att Ile	ttt Phe 395	ggt Val	tct Ser	gta Val	aca Thr	aat Asn 400		1200
gag Glu	cac His	ttg Leu	ata Ile	gac Asp 405	atg Met	gac Asp	cat His	gaa Glu 410	gcc Ala	agt Ser	ttt Phe	ttc Phe	ggg Gly 415	gcc Ala 415	ttt Phe		1248
tta Leu	ggt Val	ggc Gly 420	ggt Gly	ggc Gly	ggt Gly	tct Ser	ggt Gly 425	ggc Gly	ggt Gly	tct Ser	ggt Gly	ggc Gly 430	ggt Gly	tct Ser	ggt Gly		1296
ggc Gly	gga Gly	tcc Ser 435	acc Thr	tct Ser	gag Glu	gaa Glu	acc Thr 440	att Ile	tct Ser	aca Thr	ggt Val	caa Gln 445	gaa Glu	aag Lys	caa Gln		1344
caa Gln 450	aat Asn	att Ile	tct Ser	ccc Pro	cta Leu	gtg Val 455	aga Arg	gaa Glu	aga Arg	ggt Gly	cct Pro 460	cag Gln	aga Arg	gta Val	gca Ala		1392
gct Ala 465	cac His	ata Ile	act Thr	ggg Gly	acc Thr 470	aga Arg	gga Gly	aga Arg	agc Ser	aac Asn 475	aca Thr	ttg Leu	tct Ser	tct Ser	cca Pro 480		1440
aac Asn	tcc Ser	aag Lys	aat Asn	gaa Glu 485	aag Lys	gct Ala	ctg Leu	ggc Gly	cgc Arg 490	aaa Lys	ata Ile	aac Asn	tcc Ser	tggt Trp 495	gaa Glu		1488
tca Ser	tca Ser	agg Arg	agt Ser 500	ggg Gly	cat His	tca Ser	ttc Phe	ctg Leu 505	agc Ser	aac Asn	ttg Leu	cac His	ttg Leu 510	agg Arg	aat Asn		1536
ggt Gly	gaa Glu	ctg Leu 515	gtc Val	atc Ile	cat His	gaa Glu	aaa Lys 520	ggg Gly	ttt Phe	tac Tyr	tac Tyr	atc Ile 525	tat Tyr	tcc Ser	caa Gln		1584
aca Thr 530	tac Tyr	ttt Phe	cga Arg	ttt Phe	cag Gln	gag Glu 535	gaa Glu	ata Ile	aaa Lys	gaa Glu	aac Asn 540	aca Thr	aag Lys	aac Asn	gac Asp		1632

TherapheresisSeq Listing.txt

aaa caa atg gtc caa tat att tac aaa tac aca agt tat cct gac cct 1680
Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr 555 Ser Tyr Pro Asp Pro 560
545 550

ata ttg ttg atg aaa agt gct aga aat agt tgt tgg tct aaa gat gca 1728
Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala 575
565 570

gaa tat gga ctc tat tcc atc tat caa ggg gga ata ttt gag ctt aag 1776
Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Ile Phe Glu Leu Lys 580 585 590

gaa aat gac aga att ttt gtt tct gta aca aat gag cac ttg ata gac 1824
Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His Leu Ile Asp 595 600 605

atg gac cat gaa gcc agt ttt ttc ggg gcc ttt tta gtt ggc tga 1869
Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly 610 615 620

<210> 32
<211> 622
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: scTRAIL peptide sequence

<400> 32

Met Ala Ile Ile Tyr Leu Ile Leu Leu Phe Thr Ala Val Arg Gly Ala
1 5 10 15

Ala Ala Asp Tyr Lys Asp Asp Asp Asp Lys Glu Phe Gly Thr Ser Glu
20 25 30

Glu Thr Ile Ser Thr Val Gln Glu Lys Gln Gln Asn Ile Ser Pro Leu
35 40 45

Val Arg Glu Arg Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr
50 55 60

Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys
65 70 75 80

Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His
85 90 95

Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His
100 105 110

Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln
115 120 125

TherapheresisSeq Listing.txt

Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr
 130 135 140
 Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser
 145 150 155 160
 Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser
 165 170 175
 Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe
 180 185 190
 Val Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser
 195 200 205
 Phe Phe Gly Ala Phe Leu Val Gly Gly Gly Gly Ser Gly Gly Gly Ser
 210 215 220
 Gly Gly Gly Ser Gly Gly Gly Ser Thr Ser Glu Glu Thr Ile Ser Thr
 225 230 235 240
 Val Gln Glu Lys Gln Gln Asn Ile Ser Pro Leu Val Arg Glu Arg Gly
 245 250 255
 Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn
 260 265 270
 Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys
 275 280 285
 Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn
 290 295 300
 Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr
 305 310 315 320
 Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu
 325 330 335
 Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr
 340 345 350
 Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys
 355 360 365
 Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly
 370 375 380

TherapheresisSeq Listing.txt

Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn
385 390 395 400

Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe
405 410 415

Leu Val Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly
420 425 430

Gly Gly Ser Thr Ser Glu Glu Thr Ile Ser Thr Val Gln Glu Lys Gln
435 440 445

Gln Asn Ile Ser Pro Leu Val Arg Glu Arg Gly Pro Gln Arg Val Ala
450 455 460

Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro
465 470 475 480

Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu
485 490 495

Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn
500 505 510

Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln
515 520 525

Thr Tyr Phe Arg Phe Gln Glu Ile Lys Glu Asn Thr Lys Asn Asp
530 535 540

Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro
545 550 555 560

Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala
565 570 575

Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys
580 585 590

Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His Leu Ile Asp
595 600 605

Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly
610 615 620

TherapheresisSeq Listing.txt

<211> 1581

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: sCTNF sequence

<220>

<221> CDS

<222> (1)..(1578)

<400> 33

atg gct atc atc tac ctc atc ctc ctg ttc acc gct gtg cgg ggc gcg 48
Met Ala Ile Ile Tyr 5 Leu Ile Leu Leu Phe Thr Ala Val Arg Gly Ala

1
10
15

gcc gcg gat tac aaa gac gat gac gat aaa gaa ttc gga tca tct tct 96
Ala Ala Asp Tyr 20 Lys Asp Asp Asp Lys Glu Phe Gly Ser Ser Ser

20
25
30

cga acc ccg agt gac aag cct gta gcc cat gtt gta gca aac cct caa 144
Arg Thr 35 Pro Ser Asp Lys Pro 40 Val Ala His Val Val 45 Asn Pro Gln

35
40
45

gct gag ggg cag ctc cag tgg ctg aac cgc cgg gcc aat gcc ctc ctg 192
Ala Glu Gly Gln Leu Gln 55 Leu Asn Arg Arg 60 Asn Ala Leu Leu

50
55
60

gcc aat ggc gtg gag ctg aga gat aac cag ctg gtg gtg cca tca gag 240
Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu Val Val Pro Ser Glu

65
70
75
80

ggc ctg tac ctc atc tac tcc cag gtc ctc ttc aag ggc caa ggc tgc 288
Gly Leu Tyr Leu 85 Ile Tyr Ser Gln Val 90 Leu Phe Lys Gly Gln Gly Cys

85
90
95

ccc tcc acc cat gtg ctc ctc acc cac acc atc agc cgc atc gcc gtc 336
Pro Ser Thr His 100 Val Leu Leu Thr 105 His Thr Ile Ser Arg Ile Ala Val

100
105
110

tcc tac cag acc aag gtc aac ctc ctc tct gcc atc aag agc ccc tgc 384
Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser Pro Cys

115
120
125

cag agg gag acc cca gag ggg gct gag gcc aag ccc tgg tat gag ccc 432
Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys Pro 140 Trp Tyr Glu Pro

130
135
140

atc tat ctg gga ggg gtc ttc cag ctg gag aag ggt gac cga ctc agc 480
Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Leu Ser

145
150
155
160

gct gag atc aat ccg ccc gac tat ctc gac ttt gcc gag tct ggg cag 528
Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu Ser Gly Gln

165
170
175

gtc tac ttt ggg atc att gcc ctg ggt ggc ggt tct ggt ggc ggt tct 576
Val Tyr Phe Gly Ile Ile Ala Leu Gly Gly Gly Ser Gly Gly Gly Ser

180
185
190

ggt ggc ggt tct ggt ggc gga tca tca tct tct cga acc ccg agt gac 624
Gly Gly Gly Ser Gly Gly Gly Ser Ser Ser Arg Thr Pro Ser Asp

195
200
205

205

TherapheresisSeq Listing.txt

Ile	Ser	Arg	Ile	Ala	Val	Ser	Tyr	Gln	Thr	Lys	Val	Asn	Leu	Leu	Ser	
450						455					460					
gcc	atc	aag	agc	ccc	tgc	cag	agg	gag	acc	cca	gag	ggg	gct	gag	gcc	1440
Ala	Ile	Lys	Ser	Pro	Cys	Gln	Arg	Glu	Thr	Pro	Glu	Gly	Ala	Glu	Ala	
465					470				475						480	
aag	ccc	tgg	tat	gag	ccc	atc	tat	ctg	gga	ggg	gtc	ttc	cag	ctg	gag	1488
Lys	Pro	Trp	Tyr	Glu	Pro	Ile	Tyr	Leu	Gly	Gly	Val	Phe	Gln	Leu	Glu	
				485					490					495		
aag	ggt	gac	cga	ctc	agc	gct	gag	atc	aat	cgg	ccc	gac	tat	ctc	gac	1536
Lys	Gly	Asp	Arg	Leu	Ser	Ala	Glu	Ile	Asn	Arg	Pro	Asp	Tyr	Leu	Asp	
			500					505					510			
ttt	gcc	gag	tct	ggg	cag	gtc	tac	ttt	ggg	atc	att	gcc	ctg	tga		1581
Phe	Ala	Glu	Ser	Gly	Gln	Val	Tyr	Phe	Gly	Ile	Ile	Ala	Leu			
		515					520					525				

<210> 34

<211> 526

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: scTNF peptide sequence

<400> 34

Met Ala Ile Ile Tyr Leu Ile Leu Leu Phe Thr Ala Val Arg Gly Ala
1 5 10 15

Ala Ala Asp Tyr Lys Asp Asp Asp Asp Lys Glu Phe Gly Ser Ser Ser
20 25 30

Arg Thr Pro Ser Asp Lys Pro Val Ala His Val Val Ala Asn Pro Gln
35 40 45

Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn Ala Leu Leu
50 55 60

Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu Val Val Pro Ser Glu
65 70 75 80

Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly Gln Gly Cys
85 90 95

Pro Ser Thr His Val Leu Leu Thr His Thr Ile Ser Arg Ile Ala Val
100 105 110

Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser Pro Cys
115 120 125

Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu Pro

TherapheresisSeq Listing.txt

130

135

140

Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Leu Ser
 145 150 155 160

Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu Ser Gly Gln
 165 170 175

Val Tyr Phe Gly Ile Ile Ala Leu Gly Gly Gly Ser Gly Gly Gly Ser
 180 185 190

Gly Gly Gly Ser Gly Gly Gly Ser Ser Ser Ser Arg Thr Pro Ser Asp
 195 200 205

Lys Pro Val Ala His Val Val Ala Asn Pro Gln Ala Glu Gly Gln Leu
 210 215 220

Gln Trp Leu Asn Arg Arg Ala Asn Ala Leu Leu Ala Asn Gly Val Glu
 225 230 235 240

Leu Arg Asp Asn Gln Leu Val Val Pro Ser Glu Gly Leu Tyr Leu Ile
 245 250 255

Tyr Ser Gln Val Leu Phe Lys Gly Gln Gly Cys Pro Ser Thr His Val
 260 265 270

Leu Leu Thr His Thr Ile Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys
 275 280 285

Val Asn Leu Leu Ser Ala Ile Lys Ser Pro Cys Gln Arg Glu Thr Pro
 290 295 300

Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly
 305 310 315 320

Val Phe Gln Leu Glu Lys Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg
 325 330 335

Pro Asp Tyr Leu Asp Phe Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile
 340 345 350

Ile Ala Leu Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly
 355 360 365

Gly Gly Ser Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His
 370 375 380

TherapheresisSeq Listing.txt

Val Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg
385 390 395 400

Arg Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln
405 410 415

Leu Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu
420 425 430

Phe Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr
435 440 445

Ile Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser
450 455 460

Ala Ile Lys Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala
465 470 475 480

Lys Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu
485 490 495

Lys Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp
500 505 510

Phe Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu
515 520 525

<210> 35

<211> 2253

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: scFasL-AMAIZE sequence

<220>

<221> CDS

<222> (1)..(2250)

<400> 35

atg gac tgg acc tgg cgc gtg ttt tgc ctg ctc gcc gtg gct cct ggg 48
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
1 5 10 15

gcc cac agc cag gta cag ctg gtg cag tct ggg gga ggc atg gta gag 96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Gly Gly Met Val Glu
20 25 30

cct ggg ggg tcc ctt aga ctc tcc tgt gca gcc tct gga ttc act ttc 144
Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45

agt aat gcc tgg atg agc tgg gtc cgc cag gct cca ggg aag ggg ctg 192
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TherapheresisSeq Listing.txt															
Ser	Asn	Ala	Trp	Met	Ser	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu
50						55					60				
gag	tgg	gtt	ggc	cgt	ata	aaa	agc	aaa	gct	ggt	ggg	aca	gca	gag	240
Glu	Trp	Val	Gly	Arg	Ile	Lys	Ser	Lys	Ala	Gly	Gly	Thr	Ala	Glu	
65					70					75				80	
tac	gct	gca	ccc	gtg	aaa	ggc	aga	ttc	acc	atc	tca	aga	gat	gat	tca
Tyr	Ala	Ala	Pro	Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser
				85					90					95	
caa	aac	acg	ctg	tat	ctg	caa	atg	aac	agc	ctg	aaa	acc	gac	gac	aca
Gln	Asn	Thr	Leu	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Lys	Thr	Asp	Asp	Thr
			100					105					110		
gcc	gtg	tat	tac	tgt	acc	aca	cat	gtc	tac	ggt	gcc	ccc	cgg	aac	tgg
Ala	Val	Tyr	Tyr	Cys	Thr	Thr	His	Val	Tyr	Gly	Ala	Pro	Arg	Asn	Trp
			115				120					125			
ggc	cag	gga	tcc	ctg	gtc	acc	gtc	tcc	tca	gcc	tcc	acc	aag	ggc	cca
Gly	Gln	Gly	Ser	Leu	Val	Thr	Val	Ser	Ser	Ala	Thr	Thr	Lys	Gly	Pro
			130				135				140				
aag	ctt	gaa	gaa	ggt	gaa	ttt	tca	gaa	gca	cgc	gta	cag	tct	gtg	ttg
Lys	Leu	Glu	Glu	Gly	Glu	Phe	Ser	Glu	Ala	Arg	Val	Gln	Ser	Val	Leu
					150					155					160
act	cag	ccg	ccc	tca	gtg	tct	gcg	gcc	cca	gga	cag	aag	gtc	acc	atc
Thr	Gln	Pro	Pro	Ser	Val	Ser	Ala	Ala	Pro	Gly	Gln	Lys	Val	Thr	Ile
				165					170					175	
tcc	tgc	tct	gga	agc	agc	tcc	aac	att	gga	aat	aat	tat	gtc	tcc	tgg
Ser	Cys	Ser	Gly	Ser	Ser	Ser	Asn	Ile	Gly	Asn	Asn	Tyr	Val	Ser	Trp
			180					185					190		
tac	gtt	caa	ctc	cca	gga	aca	gcc	ccc	aaa	ctc	ctc	att	tat	gac	aat
Tyr	Val	Gln	Leu	Pro	Gly	Thr	Ala	Pro	Lys	Leu	Leu	Ile	Tyr	Asp	Asn
			195				200								
aat	aag	cga	ttc	tca	gga	gtt	cct	gac	cga	ttc	tct	ggc	tcc	aag	tct
Asn	Lys	Arg	Phe	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Lys	Ser
						215					220				
ggc	acg	tca	gcc	acc	ctg	ggc	atc	acc	ggg	ctc	cag	act	ggg	gac	gag
Gly	Thr	Ser	Ala	Thr	Leu	Gly	Ile	Thr	Gly	Leu	Gln	Thr	Gly	Asp	Glu
					230				235					240	
gcc	gat	tat	tac	tgc	gga	gca	tgg	gat	ggc	agc	ctg	cgt	gaa	gcg	gta
Ala	Asp	Tyr	Tyr	Cys	Gly	Ala	Trp	Asp	Gly	Ser	Leu	Arg	Glu	Ala	Val
				245					250					255	
ttc	ggc	gga	ggg	acc	aag	gtc	acc	gtc	cta	ggt	gcg	gcc	gca	gtt	gag
Phe	Gly	Gly	Gly	Thr	Lys	Val	Thr	Val	Leu	Gly	Ala	Ala	Ala	Val	Glu
				260				265					270		
ctc	gag	gcg	gcc	gcg	gat	tac	aaa	gac	gat	gac	gat	aaa	gaa	ttc	acg
Leu	Glu	Ala	Ala	Ala	Asp	Tyr	Lys	Asp	Asp	Asp	Asp	Lys	Glu	Phe	Thr
				275			280					285			
cgt	gaa	aaa	aag	gag	ctg	agg	aaa	gtg	gcc	cat	tta	aca	ggc	aag	tcc
Arg	Glu	Lys	Lys	Glu	Leu	Arg	Lys	Val	Ala	His	Leu	Thr	Gly	Lys	Ser
				290		295					300				

TherapheresisSeq Listing.txt

aac Asn 305	tca Ser	agg Arg	tcc Ser	atg Met	cct Pro 310	ctg Leu	gaa Glu	tgg Trp	gaa Glu	gac Asp 315	acc Thr	tat Tyr	gga Gly	att Ile	gtc Val 320	960
ctg Leu	ctt Leu	tct Ser	gga Gly	gtg Val 325	aag Lys	tat Tyr	aag Lys	aag Lys	ggt Gly 330	ggc Gly	ctt Leu	gtg Val	atc Ile	aat Asn 335	gaa Glu	1008
act Thr	ggg Gly	ctg Leu	tac Tyr 340	ttt Phe	gta Val	tat Tyr	tcc Ser	aaa Lys 345	gta Val	tac Tyr	ttc Phe	cgg Arg	ggt Gly 350	caa Gln	tct Ser	1056
tgc Cys	aac Asn	aac Asn 355	ctg Leu	ccc Pro	ctg Leu	agc Ser	cac His 360	aag Lys	gtc Val	tac Tyr	atg Met	agg Arg 365	aac Asn	tct Ser	aag Lys	1104
tat Tyr	ccc Pro 370	cag Gln	gat Asp	ctg Leu	gtg Val	atg Met 375	atg Met	gag Glu	ggg Gly	aag Lys	atg Met 380	atg Met	agc Ser	tac Tyr	tgc Cys	1152
act Thr 385	act Thr	ggg Gly	cag Gln	atg Met	tgg Trp 390	gcc Ala	cgc Arg	agc Ser	agc Ser	tac Tyr 395	ctg Leu	ggg Gly	gca Ala	gtg Val	ttc Phe 400	1200
aat Asn	ctt Leu	acc Thr	agt Ser	gct Ala 405	gat Asp	cat His	tta Leu	tat Tyr	gtc Val 410	aac Asn	gta Val	tct Ser	gag Glu	ctc Leu 415	tct Ser	1248
ctg Leu	gtc Val	aat Asn 420	ttt Phe	gag Glu	gaa Glu	tct Ser	cag Gln	acg Thr 425	ttt Phe	ttc Phe	ggc Gly	tta Leu 430	tat Tyr	aag Lys	ctc Leu	1296
ggt Gly	ggc Gly	ggt Gly 435	tct Ser	ggt Gly	ggc Gly	ggt Gly	tct Ser 440	ggt Gly	ggc Gly	ggt Gly	tct Ser	ggt Gly 445	ggc Gly	gga Gly	tca Ser	1344
gaa Glu 450	aaa Lys	aag Lys	gag Glu	ctg Leu	agg Arg	aaa Lys 455	gtg Val	gcc Ala	cat His	tta Leu	aca Thr 460	ggc Gly	aag Lys	tcc Ser	aac Asn	1392
tca Arg 465	agg Ser	tcc Ser	atg Met	cct Pro	ctg Leu 470	gaa Glu	tgg Trp	gaa Glu	gac Asp	acc Thr 475	tat Tyr	gga Gly	att Ile	gtc Val	ctg Leu 480	1440
ctt Leu	tct Ser	gga Gly	gtg Val	aag Lys 485	tat Tyr	aag Lys	aag Lys	ggt Gly	ggc Gly 490	ctt Leu	gtg Val	atc Ile	aat Asn	gaa Glu 495	act Thr	1488
ggg Gly	ctg Leu	tac Tyr	ttt Phe 500	gta Val	tat Tyr	tcc Ser	aaa Lys 505	gta Val	tac Tyr	ttc Phe	cgg Arg	ggt Gly	caa Gln 510	tct Ser	tgc Cys	1536
aac Asn	aac Asn	ctg Leu 515	ccc Pro	ctg Leu	agc Ser	cac His	aag Lys 520	gtc Val	tac Tyr	atg Met	agg Arg	aac Asn 525	tct Ser	aag Lys	tat Tyr	1584
ccc Pro 530	cag Gln	gat Asp	ctg Leu	gtg Val	atg Met	atg Met 535	gag Glu	ggg Gly	aag Lys	atg Met	atg Met 540	agc Ser	tac Tyr	tgc Cys	act Thr	1632
act Thr 545	ggg Gly	cag Gln	atg Met	tgg Trp	gcc Ala 550	cgc Arg	agc Ser	agc Ser	tac Tyr	ctg Leu 555	ggg Gly	gca Ala	gtg Val	ttc Phe	aat Asn 560	1680

TherapheresisSeq Listing.txt

ctt acc agt gct gat cat tta tat gtc aac gta tct gag ctc tct ctg	1728
Leu Thr Ser Ala Asp His Leu Tyr Val Asn Val Ser Glu Leu Ser Leu	
565	
gtc aat ttt gag gaa tct cag acg ttt ttc ggc tta tat aag ctc ggt	1776
Val Asn Phe Glu Ser Gln Thr Phe Gly Leu Tyr Lys 590	
580	
ggc ggt tct ggt ggc ggt tct ggt ggc ggt tct ggt ggc gga tcc gaa	1824
Gly Gly Ser 595 Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser Glu	
600	
605	
aaa aag gag ctg agg aaa gtg gcc cat tta aca ggc aag tcc aac tca	1872
Lys Lys 610 Glu Leu Arg Lys Val Ala His Leu Thr Gly Lys Ser Asn Ser	
615	
agg tcc atg cct ctg gaa tgg gaa gac acc tat gga att gtc ctg ctt	1920
Arg Ser Met Pro Leu Glu Trp Glu Asp Thr Tyr 635	
625	
640	
tct gga gtg aag tat aag aag ggt ggc ctt gtg atc aat gaa act ggg	1968
Ser Gly Val Lys Tyr Lys Lys Gly Gly Leu Val Ile Asn Glu Thr Gly	
645	
650	
655	
ctg tac ttt gta tat tcc aaa gta tac ttc cgg ggt caa tct tgc aac	2016
Leu Tyr Phe Val Tyr Ser Lys Val Tyr Phe Arg Gly Gln Ser Cys Asn	
660	
665	
670	
aac ctg ccc ctg agc cac aag gtc tac atg agg aac tct aag tat ccc	2064
Asn Leu Pro Leu Ser His Lys Val Tyr Met Arg Asn Ser Lys Tyr Pro	
675	
680	
685	
cag gat ctg gtg atg atg gag ggg aag atg atg agc tac tgc act act	2112
Gln Asp 690 Leu Val Met Met Glu Gly Lys Met Met Ser Tyr Cys Thr Thr	
695	
700	
ggg cag atg tgg gcc cgc agc agc tac ctg ggg gca gtg ttc aat ctt	2160
Gly Gln Met Trp Ala Arg Ser Ser Tyr Leu Gly 715	
705	
710	
715	
720	
acc agt gct gat cat tta tat gtc aac gta tct gag ctc tct ctg gtc	2208
Thr Ser Ala Asp His Leu Tyr Val Asn Val Ser Glu Leu Ser Leu Val	
725	
730	
735	
aat ttt gag gaa tct cag acg ttt ttc ggc tta tat aag ctc tga	2253
Asn Phe Glu Glu Ser Gln Thr Phe Phe Gly Leu Tyr Lys Leu 750	
740	
745	
750	

<210> 36

<211> 750

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: scFasL-AMAIze peptide sequence

<400> 36

Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
1 5 10 15

TherapheresisSeq Listing.txt

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Gly Gly Met Val Glu
20 25 30

Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45

Ser Asn Ala Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60

Glu Trp Val Gly Arg Ile Lys Ser Lys Ala Gly Gly Gly Thr Ala Glu
65 70 75 80

Tyr Ala Ala Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser
85 90 95

Gln Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Thr Thr His Val Tyr Gly Ala Pro Arg Asn Trp
115 120 125

Gly Gln Gly Ser Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
130 135 140

Lys Leu Glu Glu Gly Glu Phe Ser Glu Ala Arg Val Gln Ser Val Leu
145 150 155 160

Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln Lys Val Thr Ile
165 170 175

Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn Tyr Val Ser Trp
180 185 190

Tyr Val Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Asp Asn
195 200 205

Asn Lys Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys Ser
210 215 220

Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln Thr Gly Asp Glu
225 230 235 240

Ala Asp Tyr Tyr Cys Gly Ala Trp Asp Gly Ser Leu Arg Glu Ala Val
245 250 255

Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly Ala Ala Ala Val Glu
260 265 270

TherapheresisSeq Listing.txt

Leu Glu Ala Ala Ala Asp Tyr Lys Asp Asp Asp Asp Lys Glu Phe Thr
 275 280 285
 Arg Glu Lys Lys Glu Leu Arg Lys Val Ala His Leu Thr Gly Lys Ser
 290 295 300
 Asn Ser Arg Ser Met Pro Leu Glu Trp Glu Asp Thr Tyr Gly Ile Val
 305 310 315 320
 Leu Leu Ser Gly Val Lys Tyr Lys Lys Gly Gly Leu Val Ile Asn Glu
 325 330 335
 Thr Gly Leu Tyr Phe Val Tyr Ser Lys Val Tyr Phe Arg Gly Gln Ser
 340 345 350
 Cys Asn Asn Leu Pro Leu Ser His Lys Val Tyr Met Arg Asn Ser Lys
 355 360 365
 Tyr Pro Gln Asp Leu Val Met Met Glu Gly Lys Met Met Ser Tyr Cys
 370 375 380
 Thr Thr Gly Gln Met Trp Ala Arg Ser Ser Tyr Leu Gly Ala Val Phe
 385 390 395 400
 Asn Leu Thr Ser Ala Asp His Leu Tyr Val Asn Val Ser Glu Leu Ser
 405 410 415
 Leu Val Asn Phe Glu Glu Ser Gln Thr Phe Phe Gly Leu Tyr Lys Leu
 420 425 430
 Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser
 435 440 445
 Glu Lys Lys Glu Leu Arg Lys Val Ala His Leu Thr Gly Lys Ser Asn
 450 455 460
 Ser Arg Ser Met Pro Leu Glu Trp Glu Asp Thr Tyr Gly Ile Val Leu
 465 470 475 480
 Leu Ser Gly Val Lys Tyr Lys Lys Gly Gly Leu Val Ile Asn Glu Thr
 485 490 495
 Gly Leu Tyr Phe Val Tyr Ser Lys Val Tyr Phe Arg Gly Gln Ser Cys
 500 505 510
 Asn Asn Leu Pro Leu Ser His Lys Val Tyr Met Arg Asn Ser Lys Tyr
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515

TherapheresisSeq Listing.txt
520

525

Pro Gln Asp Leu Val Met Met Glu Gly Lys Met Met Ser Tyr Cys Thr
530 535 540

Thr Gly Gln Met Trp Ala Arg Ser Ser Tyr Leu Gly Ala Val Phe Asn
545 550 555 560

Leu Thr Ser Ala Asp His Leu Tyr Val Asn Val Ser Glu Leu Ser Leu
565 570 575

Val Asn Phe Glu Glu Ser Gln Thr Phe Phe Gly Leu Tyr Lys Leu Gly
580 585 590

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Glu
595 600 605

Lys Lys Glu Leu Arg Lys Val Ala His Leu Thr Gly Lys Ser Asn Ser
610 615 620

Arg Ser Met Pro Leu Glu Trp Glu Asp Thr Tyr Gly Ile Val Leu Leu
625 630 635 640

Ser Gly Val Lys Tyr Lys Lys Gly Gly Leu Val Ile Asn Glu Thr Gly
645 650 655

Leu Tyr Phe Val Tyr Ser Lys Val Tyr Phe Arg Gly Gln Ser Cys Asn
660 665 670

Asn Leu Pro Leu Ser His Lys Val Tyr Met Arg Asn Ser Lys Tyr Pro
675 680 685

Gln Asp Leu Val Met Met Glu Gly Lys Met Met Ser Tyr Cys Thr Thr
690 695 700

Gly Gln Met Trp Ala Arg Ser Ser Tyr Leu Gly Ala Val Phe Asn Leu
705 710 715 720

Thr Ser Ala Asp His Leu Tyr Val Asn Val Ser Glu Leu Ser Leu Val
725 730 735

Asn Phe Glu Glu Ser Gln Thr Phe Phe Gly Leu Tyr Lys Leu
740 745 750

<210> 37
<211> 2646
<212> DNA
<213> Artificial Sequence

TherapheresisSeq Listing.txt

<220>

<223> Description of Artificial Sequence: scTRAIL-AMAIZE sequence

<220>

<221> CDS

<222> (1)..(2643)

<400> 37

atg gac tgg acc tgg cgc gtg ttt tgc ctg ctc gcc gtg gct cct ggg	48
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly	
1 5 10 15	

gcc cac agc cag gta cag ctg gtg cag tct ggg gga ggc atg gta gag	96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Gly Gly Met Val Glu	
20 25 30	

cct ggg ggg tcc ctt aga ctc tcc tgt gca gcc tct gga ttc act ttc	144
Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe	
35 40 45	

agt aat gcc tgg atg agc tgg gtc cgc cag gct cca ggg aag ggg ctg	192
Ser Asn Ala Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu	
50 55 60	

gag tgg gtt ggc cgt ata aaa agc aaa gct ggt ggt ggg aca gca gag	240
Glu Trp Val Gly Arg Ile Lys Ser Lys Ala Gly Gly Thr Thr Ala Glu	
65 70 75 80	

tac gct gca ccc gtg aaa ggc aga ttc acc atc tca aga gat gat tca	288
Tyr Ala Ala Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser	
85 90 95	

caa aac acg ctg tat ctg caa atg aac agc ctg aaa acc gac gac aca	336
Gln Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Asp Asp Thr	
100 105 110	

gcc gtg tat tac tgt acc aca cat gtc tac ggt gcc ccc cgg aac tgg	384
Ala Val Tyr Tyr Cys Thr Thr His Val Tyr Gly Ala Pro Arg Asn Trp	
115 120 125	

ggc cag gga tcc ctg gtc acc gtc tcc tca gcc tcc acc aag ggc cca	432
Gly Gln Gly Ser Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro	
130 135 140	

aag ctt gaa gaa ggt gaa ttt tca gaa gca cgc gta cag tct gtg ttg	480
Lys Leu Glu Glu Gly Phe Ser Ser Glu Ala Arg Val Gln Ser Val Leu	
145 150 155 160	

act cag ccg ccc tca gtg tct gcg gcc cca gga cag aag gtc acc atc	528
Thr Gln Pro Pro Ser Val Ser Ala Ala Gly Gln Lys Val Thr Ile	
165 170 175	

tcc tgc tct gga agc agc tcc aac att gga aat aat tat gtc tcc tgg	576
Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn Tyr Val Ser Trp	
180 185 190	

tac gtt caa ctc cca gga aca gcc ccc aaa ctc ctc att tat gac aat	624
Tyr Val Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Asp Asn	
195 200 205	

TherapheresisSeq Listing.txt

aat aag cga ttc tca gga gtt cct gac cga ttc tct ggc tcc aag tct Asn Lys Arg Phe Ser Gly Val 215 Pro Asp Arg Phe Ser Gly Ser Lys Ser	672
ggc acg tca gcc acc ctg ggc atc acc ggg ctc cag act ggg gac gag Gly Thr Ser Ala Thr Leu 230 Gly Ile Thr Gly Leu 235 Gln Thr Gly Asp Glu 240	720
gcc gat tat tac tgc gga gca tgg gat ggc agc ctg cgt gaa gcg gta Ala Asp Tyr Tyr Cys 245 Gly Ala Trp Asp Gly Ser Leu Arg Glu Ala 255 Val	768
ttc ggc gga ggg acc aag gtc acc gtc cta ggt gcg gcc gca gtt gag Phe Gly Gly Thr Lys Val 260 Thr Val 265 Leu Gly Ala Val 270	816
ctc gag gcg gcc gcg gat tac aaa gac gat gac gat aaa gaa ttc gga Leu Glu Ala 275 Ala Ala Asp Tyr Lys 280 Asp Asp Asp Lys 285 Glu Phe Gly	864
acc tct gag gaa acc att tct aca gtt caa gaa aag caa caa aat att Thr Ser 290 Glu Glu Thr Ile Ser 295 Thr Val Gln Glu Lys 300 Gln Gln Asn Ile	912
tct ccc cta gtg aga gaa aga ggt cct cag aga gta gca gct cac ata Ser Pro Leu Val Arg Glu 310 Arg Gly Pro Gln Arg 315 Val Ala Ala His Ile 320	960
act ggc acc aga gga aga agc aac aca ttg tct tct cca aac tcc aag Thr Gly Thr Arg Gly 325 Arg Ser Asn Thr 330 Leu Ser Ser Pro Asn 335 Lys	1008
aat gaa aag gct ctg ggc cgc aaa ata aac tcc tgg gaa tca tca agg Asn Glu Lys Ala 340 Leu Gly Arg Lys Ile 345 Asn Ser Trp Glu Ser 350 Arg	1056
agt ggc cat tca ttc ctg agc aac ttg cac ttg agg aat ggt gaa ctg Ser Gly His 355 Ser Phe Leu Ser Asn 360 Leu His Leu Arg Asn 365 Gly Glu Leu	1104
gtc atc cat gaa aaa ggc ttt tac tac atc tat tcc caa aca tac ttt Val Ile 370 His Glu Lys Gly Phe 375 Tyr Tyr Ile Tyr Ser 380 Gln Thr Tyr Phe	1152
cga ttt cag gag gaa ata aaa gaa aac aca aag aac gac asp aaa caa atg Arg Phe Gln Glu Glu Ile 390 Lys Glu Asn Thr Lys 395 Asn Asp Lys Gln Met 400	1200
gtc caa tat att tac aaa tac aca agt tat cct gac cct ata ttg ttg Val Gln Tyr Ile 405 Lys Thr Ser Tyr 410 Pro Asp Pro Ile Leu Leu	1248
atg aaa agt gct aga aat agt tgt tgg tct aaa gat gca gaa tat gga Met Lys Ser 420 Arg Asn Ser Cys 425 Trp Ser Lys Asp Ala Glu Tyr Gly	1296
ctc tat tcc atc tat caa ggc gga ata ttt gag ctt aag gaa aat gac Leu Tyr 435 Ile Tyr Gln Gly 440 Ile Phe Glu Leu Lys 445 Glu Asn Asp	1344

TherapheresisSeq Listing.txt

aga Arg 450	att Ile	ttt Phe	ggt Val	tct Ser	gta Val	aca Thr 455	aat Asn	gag Glu	cac His	ttg Leu	ata Ile 460	gac Asp	atg Met	gac Asp	cat His	1392
gaa Glu 465	gcc Ala	agt Ser	ttt Phe	ttc Phe	ggg Gly 470	gcc Ala	ttt Phe	tta Leu	ggt Val	ggc Gly 475	ggt Gly	ggc Gly	ggt Gly	tct Ser	ggt Gly 480	1440
ggc Gly	ggt Gly	tct Ser	ggt Gly	ggc Gly 485	ggt Gly	tct Ser	ggt Gly	ggc Gly	gga Gly 490	tca Ser	acc Thr	tct Ser	gag Glu	gaa Glu 495	acc Thr	1488
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gaa Glu	aga Arg	ggt Gly 515	cct Pro	cag Gln	aga Arg	gta Val	gca Ala 520	gct Ala	cac His	ata Ile	act Thr	ggg Gly 525	acc Thr	aga Arg	gga Gly	1584
aga Arg	agc Ser 530	aac Asn	aca Thr	ttg Leu	tct Ser	tct Ser 535	cca Pro	aac Asn	tcc Ser	aag Lys	aat Asn 540	gaa Glu	aag Lys	gct Ala	ctg Leu	1632
ggc Gly 545	cgc Arg	aaa Lys	ata Ile	aac Asn	tcc Ser 550	tgg Trp	gaa Glu	tca Ser	tca Ser	agg Arg 555	agt Ser	ggg Gly	cat His	tca Ser	ttc Glu 560	1680
ctg Leu	agc Ser	aac Asn	ttg Leu	cac His 565	ttg Leu	agg Arg	aat Asn	ggt Gly	gaa Glu 570	ctg Leu	gtc Val	atc Ile	cat His	gaa Glu 575	aaa Lys	1728
ggg Gly	ttt Phe	tac Tyr	tac Tyr 580	atc Ile	tat Tyr	tcc Ser	caa Gln	aca Thr 585	tac Tyr	ttt Phe	cga Arg	ttt Phe	cag Gln 590	gag Glu	gaa Glu	1776
ata Ile	aaa Lys 595	gaa Glu	aac Asn	aca Thr	aag Lys	aac Asn	gac Asp 600	aaa Lys	caa Gln	atg Met	gtc Val	caa Gln 605	tat Tyr	att Ile	tac Tyr	1824
aaa Lys 610	tac Tyr	aca Thr	agt Ser	tat Tyr	cct Pro	gac Asp 615	cct Pro	ata Ile	ttg Leu	ttg Leu	atg Met 620	aaa Lys	agt Ser	gct Ala	aga Arg	1872
aat Asn 625	agt Ser	tgt Cys	tgg Trp	tct Ser	aaa Lys 630	gat Asp	gca Ala	gaa Glu	tat Tyr	gga Gly 635	ctc Leu	tat Tyr	tcc Ser	atc Ile	tat Tyr 640	1920
caa Gln	ggg Gly	gga Gly	ata Ile	ttt Phe 645	gag Glu	ctt Leu	aag Lys	gaa Glu	aat Asn 650	gac Asp	aga Arg	att Ile	ttt Phe	ggt Val 655	tct Ser	1968
gta Val	aca Thr	aat Asn 660	gag Glu	cac His	ttg Leu	ata Ile	gac Asp	atg Met 665	gac Asp	cat His	gaa Glu	gcc Ala	agt Ser 670	ttt Phe	ttc Phe	2016
ggg Gly	gcc Ala	ttt Phe 675	tta Leu	ggt Val	ggc Gly	ggt Gly	ggc Gly 680	ggt Gly	tct Ser	ggt Gly	ggc Gly	ggt Gly 685	tct Ser	ggt Gly	ggc Gly	2064
ggt Gly	tct Ser	ggt Gly	ggc Gly	gga Gly	tcc Ser	acc Ser	tct Ser	gag Gly	gaa Gly	acc Ser	att Ser	tct Ser	aca Ser	ggt Val	caa Gly	2112

TherapheresisSeq Listing.txt

Gly	Ser	Gly	Gly	Gly	Ser	Thr	Ser	Glu	Glu	Thr	Ile	Ser	Thr	Val	Gln	
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gaa	aag	caa	caa	aat	att	tct	ccc	cta	gtg	aga	gaa	aga	ggt	cct	cag	2160
Glu	Lys	Gln	Gln	Asn	Ile	Ser	Pro	Leu	Val	Arg	Glu	Arg	Gly	Pro	Gln	
705					710					715					720	
aga	gta	gca	gct	cac	ata	act	ggg	acc	aga	gga	aga	agc	aac	aca	ttg	2208
Arg	Val	Ala	Ala	His	Ile	Thr	Gly	Thr	Arg	Gly	Arg	Ser	Asn	Thr	Leu	
				725					730					735		
tct	tct	cca	aac	tcc	aag	aat	gaa	aag	gct	ctg	ggc	cgc	aaa	ata	aac	2256
Ser	Ser	Pro	Asn	Ser	Lys	Asn	Glu	Lys	Ala	Leu	Gly	Arg	Lys	Ile	Asn	
			740					745					750			
tcc	tgg	gaa	tca	tca	agg	agt	ggg	cat	tca	ttc	ctg	agc	aac	ttg	cac	2304
Ser	Trp	Arg	Ser	Ser	Arg	Ser	Gly	His	Ser	Phe	Leu	Ser	Asn	Leu	His	
		755					760					765				
ttg	agg	aat	ggt	gaa	ctg	gtc	atc	cat	gaa	aaa	ggg	ttt	tac	tac	atc	2352
Leu	Arg	Asn	Gly	Glu	Leu	Val	Ile	His	Glu	Lys	Gly	Phe	Tyr	Tyr	Ile	
	770					775					780					
tat	tcc	caa	aca	tac	ttt	cga	ttt	cag	gag	gaa	ata	aaa	gaa	aac	aca	2400
Tyr	Ser	Gln	Thr	Tyr	Phe	Arg	Phe	Gln	Glu	Glu	Ile	Lys	Glu	Asn	Thr	
785					790				795						800	
aag	aac	gac	aaa	caa	atg	gtc	caa	tat	att	tac	aaa	tac	aca	agt	tat	2448
Lys	Asn	Asp	Lys	Gln	Met	Val	Gln	Tyr	Ile	Tyr	Lys	Tyr	Thr	Ser	Tyr	
				805					810					815		
cct	gac	cct	ata	ttg	ttg	atg	aaa	agt	gct	aga	aat	agt	tgt	tgg	tct	2496
Pro	Asp	Pro	Ile	Leu	Leu	Met	Lys	Ser	Ala	Arg	Asn	Ser	Cys	Trp	Ser	
			820					825					830			
aaa	gat	gca	gaa	tat	gga	ctc	tat	tcc	atc	tat	caa	ggg	gga	ata	ttt	2544
Lys	Asp	Ala	Glu	Tyr	Gly	Leu	Tyr	Ser	Ile	Tyr	Gln	Gly	Gly	Ile	Phe	
		835					840					845				
gag	ctt	aag	gaa	aat	gac	aga	att	ttt	ggt	tct	gta	aca	aat	gag	cac	2592
Glu	Leu	Lys	Glu	Asn	Asp	Arg	Ile	Phe	Val	Ser	Val	Thr	Asn	Glu	His	
	850					855					860					
ttg	ata	gac	atg	gac	cat	gaa	gcc	agt	ttt	ttc	ggg	gcc	ttt	tta	gtt	2640
Leu	Ile	Asp	Met	Asp	His	Glu	Ala	Ser	Phe	Phe	Gly	Ala	Phe	Leu	Val	
	865				870				875					880		
ggc	tga															2646
Gly																

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 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: scTRAIL-AMAIZE peptide sequence

<400> 38

TherapheresisSeq Listing.txt

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Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Gly Gly Met Val Glu
20      25      30

Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35      40      45

Ser Asn Ala Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50      55      60

Glu Trp Val Gly Arg Ile Lys Ser Lys Ala Gly Gly Gly Thr Ala Glu
65      70      75      80

Tyr Ala Ala Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser
85      90      95

Gln Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Asp Asp Thr
100     105     110

Ala Val Tyr Tyr Cys Thr Thr His Val Tyr Gly Ala Pro Arg Asn Trp
115     120     125

Gly Gln Gly Ser Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
130     135     140

Lys Leu Glu Glu Gly Glu Phe Ser Glu Ala Arg Val Gln Ser Val Leu
145     150     155     160

Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln Lys Val Thr Ile
165     170     175

Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn Tyr Val Ser Trp
180     185     190

Tyr Val Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Asp Asn
195     200     205

Asn Lys Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys Ser
210     215     220

Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln Thr Gly Asp Glu
225     230     235     240

Ala Asp Tyr Tyr Cys Gly Ala Trp Asp Gly Ser Leu Arg Glu Ala Val
245     250     255

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TherapheresisSeq Listing.txt

Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly Ala Ala Ala Val Glu
 260 265 270
 Leu Glu Ala Ala Ala Asp Tyr Lys Asp Asp Asp Asp Lys Glu Phe Gly
 275 280 285
 Thr Ser Glu Glu Thr Ile Ser Thr Val Gln Glu Lys Gln Gln Asn Ile
 290 295 300
 Ser Pro Leu Val Arg Glu Arg Gly Pro Gln Arg Val Ala Ala His Ile
 305 310 315 320
 Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys
 325 330 335
 Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg
 340 345 350
 Ser Gly His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu
 355 360 365
 Val Ile His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe
 370 375 380
 Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met
 385 390 395 400
 Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu
 405 410 415
 Met Lys Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly
 420 425 430
 Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp
 435 440 445
 Arg Ile Phe Val Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His
 450 455 460
 Glu Ala Ser Phe Phe Gly Ala Phe Leu Val Gly Gly Gly Gly Ser Gly
 465 470 475 480
 Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Thr Ser Glu Glu Thr
 485 490 495
 Ile Ser Thr Val Gln Glu Lys Gln Gln Asn Ile Ser Pro Leu Val Arg
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TherapheresisSeq Listing.txt

500
 505
 510
 Glu Arg Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly
 515 520
 Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu
 530 535 540
 Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe
 545 550 555 560
 Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys
 565 570
 Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu
 580 585 590
 Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr
 595 600 605
 Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg
 610 615 620
 Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr
 625 630 635 640
 Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser
 645 650 655
 Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe
 660 665 670
 Gly Ala Phe Leu Val Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly
 675 680 685
 Gly Ser Gly Gly Gly Ser Thr Ser Glu Glu Thr Ile Ser Thr Val Gln
 690 695 700
 Glu Lys Gln Gln Asn Ile Ser Pro Leu Val Arg Glu Arg Gly Pro Gln
 705 710 715 720
 Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn Thr Leu
 725 730 735
 Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys Ile Asn
 740 745 750

TherapheresisSeq Listing.txt

Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn Leu His
755 760 765

Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr Tyr Ile
770 775 780

Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu Asn Thr
785 790 795 800

Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr Ser Tyr
805 810 815

Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys Trp Ser
820 825 830

Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly Ile Phe
835 840 845

Glu Leu Lys Glu Asn Asp Arg Ile Phe Val Ser Val Thr Asn Glu His
850 855 860

Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe Leu Val
865 870 875 880

Gly

<210> 39
<211> 2358
<212> DNA
<213> Artificial Sequence

<220>
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<220>
<221> CDS
<222> (1)..(2355)

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gcc cac agc cag gta cag ctg gtg cag tct ggg gga ggc atg gta gag 96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Gly Gly Met Val Glu
20 25 30

cct ggg ggg tcc ctt aga ctc tcc tgt gca gcc tct gga ttc act ttc 144
Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45

TherapheresisSeq Listing.txt

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gag Glu	tgg Trp	gtt Val	ggc Gly	cgt Arg	ata Ile	aaa Lys	70	agc Ser	aaa Lys	gct Ala	ggt Gly	ggt Gly	ggg Gly	aca Thr	gca Ala	gag Glu	240
tac Tyr	gct Ala	gca Ala	ccc Pro	gtg Val	85	aaa Lys	ggc Gly	aga Arg	ttc Phe	acc Thr	atc Ile	tca Ser	aga Arg	gat Asp	gat Asp	tca Ser	288
caa Gln	aac Asn	acg Thr	ctg Leu	tat Tyr	ctg Leu	caa Gln	100	atg Met	aac Asn	agc Ser	ctg Leu	aaa Lys	acc Thr	gac Asp	gac Asp	aca Thr	336
gcc Ala	gtg Val	tat Tyr	tac Cys	tgt Tyr	acc Thr	aca Thr	115	cat His	gtc Val	tac Tyr	ggt Gly	gcc Ala	ccc Pro	cgg Arg	aac Asn	tgg Trp	384
ggc Gly	cag Gln	gga Gly	tcc Ser	ctg Leu	gtc Val	acc Thr	130	gtc Val	tcc Ser	tca Ser	gcc Ala	tcc Ser	acc Thr	aag Lys	ggc Gly	cca Pro	432
aag Lys	ctt Leu	gaa Glu	gaa Glu	ggt Gly	gaa Glu	ttt Phe	145	tca Ser	gaa Glu	gca Ala	cgc Arg	gta Val	cag Gln	tct Ser	gtg Val	ttg Leu	480
act Thr	cag Gln	ccg Pro	ccc Pro	tca Ser	gtg Val	tct Ser	165	gcg Ala	gcc Ala	cca Pro	gga Gly	cag Gln	aag Lys	gtc Val	acc Ser	atc Ile	528
tcc Ser	tgc Cys	tct Ser	gga Gly	agc Ser	agc Ser	tcc Ser	180	aac Asn	att Ile	gga Gly	aat Asn	aat Asn	tat Tyr	gtc Val	tcc Ser	tgg Trp	576
tac Tyr	gtt Val	caa Gln	ctc Leu	cca Pro	gga Gly	aca Thr	195	gcc Ala	ccc Pro	aaa Lys	ctc Leu	ctc Leu	att Ile	tat Tyr	gac Asp	aat Asn	624
aat Asn	aag Lys	cga Arg	ttc Phe	tca Ser	gga Gly	gtt Val	210	cct Pro	gac Asp	cga Arg	ttc Phe	tct Ser	ggc Gly	tcc Ser	aag Lys	tct Ser	672
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gcc Ala	gat Asp	tat Tyr	tac Tyr	tgc Cys	gga Gly	gca Ala	245	tgg Trp	gat Asp	ggc Gly	agc Ser	ctg Leu	cgt Arg	gaa Glu	gcg Ala	gta Val	768
ttc Phe	ggc Gly	gga Gly	ggg Gly	acc Thr	aag Lys	gtc Val	260	acc Thr	gtc Val	cta Leu	ggt Gly	gcg Ala	gcc Ala	gca Ala	gtt Val	gag Glu	816
ctc Leu	gag Glu	gcg Ala	gcc Ala	gcg Ala	gat Asp	tac Tyr	275	aaa Lys	gac Asp	gat Asp	gac Asp	gat Asp	aaa Lys	gaa Glu	ttc Phe	gga Gly	864
tca Ser	tct Ser	tct Ser	cga Arg	acc Thr	ccg Pro	agt Ser	290	gac Asp	aag Lys	cct Pro	gta Val	gcc Ala	cat His	gtt Val	gta Val	gca Ala	912

TherapheresisSeq Listing.txt

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gcc ctc ctg gcc aat ggc gtg gag ctg aga gat aac cag ctg gtg gtg	1008
Ala Leu Leu Ala Asn 325 Gly Val Glu Leu Arg 330 Asp Asn Gln Leu Val 335	
cca tca gag ggc ctg tac ctc atc tac tcc cag gtc ctc ttc aag ggc	1056
Pro Ser Glu Gly 340 Leu Tyr Leu Ile Tyr 345 Ser Gln Val Leu Phe Lys Gly	
caa ggc tgc ccc tcc acc cat gtg ctc ctc acc cac acc atc agc cgc	1104
Gln Gly Cys 355 Pro Ser Thr His Val 360 Leu Leu Thr His Thr 365 Ile Ser Arg	
atc gcc gtc tcc tac cag acc aag gtc aac ctc ctc tct gcc atc aag	1152
Ile Ala Val Ser Tyr Gln Thr 375 Lys Val Asn Leu 380 Ser Ala Ile Lys	
agc ccc tgc cag agg gag acc cca gag ggg gct gag gcc aag ccc tgg	1200
Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly 395 Glu Ala Lys Pro Trp 400	
tat gag ccc atc tat ctg gga ggg gtc ttc cag ctg gag aag ggt gac	1248
Tyr Glu Pro Ile Tyr 405 Leu Gly Gly Val Phe 410 Gln Leu Glu Lys Gly 415 Asp	
cga ctc agc gct gag atc aat cgg ccc gac tat ctc gac ttt gcc gag	1296
Arg Leu Ser Ala 420 Glu Ile Asn Arg Pro 425 Asp Tyr Leu Asp Phe Ala Glu 430	
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Ser Gly Gln Val Tyr Phe Gly Ile 440 Ala Leu Gly Gly 445 Gly Ser Gly	
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Gly Gly Ser Gly Gly Ser 455 Gly Gly Gly Ser Ser 460 Ser Ser Arg Thr	
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Pro Ser Asp Lys Pro Val Ala His Val Val Ala Asn Pro Gln Ala Glu 480	
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Gly Gln Leu Gln Trp 485 Leu Asn Arg Arg Ala Asn Ala Leu Leu Ala Asn 495	
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Gly Val Glu Arg Asp Asn Gln 500 Leu Val Val 505 Pro Ser gag Gly Leu 510	
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Tyr Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly 520 Gln Gly 525 Cys Pro Ser	
acc cat gtg ctc ctc acc cac acc atc agc cgc atc gcc gtc tcc tac	1632
Thr His Val Leu Leu Thr 535 His Thr Ile Ser Arg 540 Ala Val Ser Tyr	
cag acc aag gtc aac ctc ctc tct gcc atc aag agc ccc tgc cag agg	1680
Gln Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser 45	

TherapheresisSeq Listing.txt																	
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atc Ile	aat Asn	cgg Arg 595	ccc Pro	gac Asp	tat Tyr	ctc Leu	gac Asp 600	ttt Phe	gcc Ala	gag Glu	tct Ser	ggg Gly 605	cag Gln	gtc Val	tac Tyr	1824	
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ggt Gly 625	tct Ser	ggt Gly	ggc Gly	gga Gly	tca Ser 630	tca Ser	tct Ser	tct Ser	cga Arg	acc Thr 635	ccg Pro	agt Ser	gac Asp	aag Lys	cct Pro 640	1920	
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ctc Leu	ctc Leu	tct Ser	gcc Ala	atc Ile 725	aag Lys	agc Ser	ccc Pro	tgc Cys	cag Gln 730	agg Arg	gag Glu	acc Thr	cca Pro	gag Glu 735	ggg Gly	2208	
gct Ala	gag Glu	gcc Ala	aag Lys 740	ccc Pro	tgg Trp	tat Tyr	gag Glu	ccc Pro 745	atc Ile	tat Tyr	ctg Leu	gga Gly	ggg Gly 750	gtc Val	ttc Phe	2256	
cag Gln	ctg Leu	gag Glu 755	aag Lys	ggt Gly	gac Asp	cga Arg	ctc Leu 760	agc Ser	gct Ala	gag Glu	atc Ile	aat Asn 765	cgg Arg	ccc Pro	gac Asp	2304	
tat Tyr	ctc Leu 770	gac Asp	ttt Phe	gcc Ala	gag Glu	tct Ser 775	ggg Gly	cag Gln	gtc Val	tac Tyr	ttt Phe 780	ggg Gly	atc Ile	att Ile	gcc Ala	2352	
ctg Leu 785	tga															2358	

TherapheresisSeq Listing.txt

<210> 40

<211> 785

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: TNF-AMAIZE peptide sequence

<400> 40

Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
1 5 10 15

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Gly Gly Met Val Glu
20 25 30

Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45

Ser Asn Ala Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60

Glu Trp Val Gly Arg Ile Lys Ser Lys Ala Gly Gly Gly Thr Ala Glu
65 70 75 80

Tyr Ala Ala Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser
85 90 95

Gln Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Thr Thr His Val Tyr Gly Ala Pro Arg Asn Trp
115 120 125

Gly Gln Gly Ser Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
130 135 140

Lys Leu Glu Glu Gly Glu Phe Ser Glu Ala Arg Val Gln Ser Val Leu
145 150 155 160

Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln Lys Val Thr Ile
165 170 175

Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn Tyr Val Ser Trp
180 185 190

Tyr Val Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Asp Asn
195 200 205

Asn Lys Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys Ser
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215

220

Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln Thr Gly Asp Glu
 225 230 235 240
 Ala Asp Tyr Tyr Cys Gly Ala Trp Asp Gly Ser Leu Arg Glu Ala Val
 245 250 255
 Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly Ala Ala Ala Val Glu
 260 265 270
 Leu Glu Ala Ala Ala Asp Tyr Lys Asp Asp Asp Asp Lys Glu Phe Gly
 275 280 285
 Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val Val Ala
 290 295 300
 Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn
 305 310 315 320
 Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu Val Val
 325 330 335
 Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly
 340 345 350
 Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile Ser Arg
 355 360 365
 Ile Ala Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala Ile Lys
 370 375 380
 Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys Pro Trp
 385 390 395 400
 Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Lys Gly Asp
 405 410 415
 Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu
 420 425 430
 Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu Gly Gly Gly Ser Gly
 435 440 445
 Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Ser Ser Arg Thr
 450 455 460

TherapheresisSeq Listing.txt

Pro Ser Asp Lys Pro Val Ala His Val Val Ala Asn Pro Gln Ala Glu
465 470 475 480

Gly Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn Ala Leu Leu Ala Asn
485 490 495

Gly Val Glu Leu Arg Asp Asn Gln Leu Val Val Pro Ser Glu Gly Leu
500 505 510

Tyr Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly Gln Gly Cys Pro Ser
515 520 525

Thr His Val Leu Leu Thr His Thr Ile Ser Arg Ile Ala Val Ser Tyr
530 535 540

Gln Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser Pro Cys Gln Arg
545 550 555 560

Glu Thr Pro Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu Pro Ile Tyr
565 570 575

Leu Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Leu Ser Ala Glu
580 585 590

Ile Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu Ser Gly Gln Val Tyr
595 600 605

Phe Gly Ile Ile Ala Leu Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly
610 615 620

Gly Ser Gly Gly Gly Ser Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro
625 630 635 640

Val Ala His Val Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp
645 650 655

Leu Asn Arg Arg Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg
660 665 670

Asp Asn Gln Leu Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser
675 680 685

Gln Val Leu Phe Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu
690 695 700

Thr His Thr Ile Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys Val Asn
705 710 715 720

TherapheresisSeq Listing.txt

Leu Leu Ser Ala Ile Lys Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly
725 730 735

Ala Glu Ala Lys Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe
740 745 750

Gln Leu Glu Lys Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp
755 760 765

Tyr Leu Asp Phe Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala
770 775 780

Leu
785

<210> 41

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide linker sequence

<400> 41

Gly Gly Gly Ser

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